

2001 Trial Transcripts Part 1

In The Matter Of:

*Honeywell International Inc., et al. v.
Hamilton Sundstrand*

*Trial Volume Number 2
February 6, 2001*

*Hawkins Reporting Service
715 N. King Street
Wilmington, DE 19801
(302) 658-6697 FAX: (302) 658-8418*

*Original File 2HONEY6.V1, 248 Pages
Min-U-Script® File ID: 1919664857*

Word Index included with this Min-U-Script®

make [14] commitments to our customers, make sure our [15] products of high qualities, they're reliable, [16] delivered on time, and we execute all our program [17] equipment. We obviously need to make financial [18] and internal metrics such as sales income, cash [19] flow, safety metrics, our inventory and so forth, [20] making sure all aspects of the business are [21] managed effectively; then finally continuing to [22] deploy innovative growth strategy and technology [23] to make sure we can maintain a good position on [24] the marketplace. That's sort of my first job.

Page 315

[1] The second part of my job is to make [2] sure that the company has the resources to really [3] accomplish all of the foregoing, which is all [4] about people. I probably spend half of my time on [5] people to make sure we've got the right people in [6] the right job, coaching, mentoring, development of [7] careers, a lot of education, providing for [8] education of people to make sure that the human [9] resource, which is at the end of the day all we [10] really have in a company, is effectively deployed [11] for the business objectives.

[12] Q: I'd like to talk a minute about larger [13] Honeywell, Honeywell International. Could you [14] share a little bit about the company of which you [15] are a part?

[16] A: Yeah. Honeywell International is today a [17] terrific company, it's a 25 billion dollar [18] industrial conglomerate. It is one of the [19] companies which has been around for 124 years. It [20] is one of the stocks that makes up the Dow Jones [21] Industrial Average that you're familiar with. But [22] today, Honeywell has a broad portfolio. There's [23] industrial controls, in fact, controls that [24] control air conditioning and heating and

Page 316

[1] ventilation systems in large buildings such as [2] this, and, in fact, it does control the system in [3] this building.

[4] It's also home and building [5] controls, you're all familiar with the thermostat, [6] the famous thermostat on the wall which is a [7] little tiny thing but it's all a part of a system [8] of home controls, and that's in 140 million homes [9] in the world. We manufacture little screens that [10] are like the laminate materials, electronic and [11] circuit card assemblies that go on PCs, the little [12] green circuit cards inside of Motorola phones for [13] example, some of the electronic materials we [14] manufacture.

[15] Then automotive, we have I'm sure [16] you've heard of Prestone, Autolite, Fram, Bendix [17] Brakes, a number of

automotive brands, we build a [18] huge number of turbochargers.

[19] Then finally we have our aerospace [20] businesses, which I'm most familiar with, where we [21] build a lot of cockpit equipment. When you look [22] at the cockpit pit of a jet, almost everything [23] that's in there is some piece of equipment we [24] build, safety equipment, weather radar, enhanced

Page 317

[1] ground assembly, communication, navigation devices [2] and so forth. We build systems in equipment, [3] auxiliary unit is one example of that that allows [4] modern aircraft, both military and commercial to [5] be, to effectively accomplish their mission. High [6] technology equipment in systems such as electric [7] power systems, air turbine start systems, the [8] pneumatic bleed system in air conditioning as well [9] as propulsion and APUs, which you've heard about.

[10] Q: How many people work at Honeywell?

[11] A: We have about 125,000 people. We're [12] probably manufacturing and service locations well [13] over 300 locations, and we're probably operating [14] around 13 or more countries around the world. [15] Counting service locations, it would be a lot more [16] than that.

[17] Q: Now, let's talk about your part of the [18] bit business. How many people work in your part [19] of the business?

[20] A: As I mentioned, I'm responsible for [21] engines and systems. Engines and systems is [22] approximately half of our aerospace business. [23] Engines and systems today is a five billion dollar [24] company. We have just under 20,000 employees. I

Page 318

[1] have just under 20,000 employees in my direct [2] charge, and we're operating about, you think about [3] our business, about 25 manufacturing locations in [4] about 10 different countries around the world. So [5] engines and systems itself is a large business, [6] but it's also a global business and one we're [7] quite proud of.

[8] Q: Mr. Loranger, could you push the [9] microphone a little bit away from you? That's [10] better, because we're getting a little bit of [11] feedback; thank you.

[12] Well, let's talk about Garrett. You [13] started working, when you first started working [14] for Honeywell Company back in 1981, for Garrett. [15] Could you tell us a little bit about Garrett?

[16] A: The Garrett Corporation is really the [17] predecessor of the technology of what today makes [18] up actually most of engines and systems. It was [19] started

back in the late '30s by Griff Garrett, [20] one of the pioneers in the aviation world. It, in [21] fact, was a company that was known as an innovator [22] in technology all through the emerging aviation, [23] the jet age space age, a company that was [24] continuously pushing the edges of the technical

Page 319

[1] envelope to develop innovative products to make [2] airplanes, as you know, higher and faster and [3] farther in the sort of wonderful evolution of [4] aviation that occurred over the last 50 years.

[5] So Garrett Corporation, a high tech [6] knowledge diverse aerospace corporation started in [7] the late '30s or early '40s, and that company [8] today is essentially almost the same company that [9] engines and systems represents.

[10] MR. ZIEGLER: Could we possibly, [11] Your Honor, ask the witness to try to refrain from [12] going beyond the actual question?

[13] THE COURT: I'll keep an ear open [14] for that, Mr. Ziegler.

[15] BY MR. KRUPKA:

[16] Q: Could you tell us, please, Mr. Loranger, [17] did APUs exist back when Garrett was still Garrett [18] before became part of Allied Signal and part [19] Honeywell?

[20] A: Absolutely they did. The APU business [21] has been in existence for quite some time.

[22] Q: What was the origin of APUs?

[23] A: As I mentioned, it actually in the [24] emergence of this so-called jet age in the early

Page 320

[1] to mid '40s, it became evident not only to our [2] self but to our customers that they needed a very [3] high power source of auxiliary power on board an [4] aircraft that could produce high energy air and [5] electricity to manage the systems of the [6] aircraft.

[7] So in the mid '40s we made the very [8] first auxiliary power unit. By the early '50s, it [9] had been installed on aircraft, and the rest is [10] history; virtually all aircraft today have them.

[11] Q: Commercial aircraft, did they used to [12] have APUs on board?

[13] A: The very early ones, no, they didn't. I [14] believe the Boeing 707 was the last commercial [15] aircraft that did not have an APU on it. And I [16] believe I'm not for sure, but I believe either the British aerospace Caravel or excuse me, the [17] French Caravel or the Boeing 727 back in the early [18] '60s time frame were the first commercial [19] transports to have APUs on them, and all [20] [21]

[20] MR. KRUPKA: No, Your Honor, I have
[21] no further questions.

THE COURT: You're excused, [23] Mr.
Loranger.

(The witness left the witness stand.)

Page 461

[1] MR. KRUPKA: Your Honor, Honeywell's [2] next witness will be John Zimmerer, and my [3] colleague, Mr. Todd Schulman, will be doing the [4] examination.

[6] JOHN GEORGE ZIMMERER, [7] the witness herein, having first been [8] duly sworn on oath, was examined and [9] testified as follows:

[11] MR. SCHULMAN: Your Honor, with your [12] permission, I'd like to give a transition [13] statement to the jury.

[14] THE COURT: Fine.

[15] MR. SCHULMAN: John Zimmerer has [16] been a Honeywell engineer for 24 years. [17] Mr. Zimmerer will testify about his involvement [18] with the Honeywell 331-350 APU, an APU which is [19] quite similar to the 331-200 APU. Like the [20] 331-200 APU, the 331-350 APU has a surge control [21] system based on the Honeywell patents that are the [22] subject of this lawsuit.

In the late '80s, Mr. Zimmerer [24] was involved with coordinating Honeywell's

Page 462

[1] relationship with Turbomeca, a French company, [2] that supplied a load compressor for Honeywell's [3] 331-350 APU. You'll recall that Mr. Loranger [4] explained that while Turbomeca was a key supplier [5] working with Honeywell to supply the load [6] compressor for one of Honeywell's APUs, Sundstrand [7] entered into an arrangement with Turbomeca to [8] jointly develop the APS 3200 APU that would [9] complete, excuse me, that would compete with [10] Honeywell.

[11] Mr. Zimmerer will add that in 1991, [12] while Turbomeca and Sundstrand were engaged in the [13] joint venture to develop the competing APS 3200 [14] APU, a Honeywell employee found a proprietary [15] Honeywell document at Turbomeca. That proprietary [16] Honeywell document in Turbomeca's possession [17] contained details concerning Honeywell's patented [18] surge control system.

THE COURT: DIRECT EXAMINATION

MR. SCHULMAN:

[22] Q: Would you please introduce yourself to [23] the ladies and gentlemen of the jury?

[24] A: Good afternoon. My name is John

Page 463

[1] Zimmerer.

[2] Q: Mr. Zimmerer, I know you got here early [3] and have been waiting outside for a while, so I [4] appreciate your patience; thank you.

[5] Now that you're here, Mr. Zimmerer, [6] please tell us, where do you work?

[7] A: I'm employed at Honeywell in Phoenix, [8] Arizona.

[9] Q: And how long have you worked at Honeywell [10] or one of its predecessors?

[11] A: I joined what was previously known as [12] Garrett in 1976, so it's been just about over 24 [13] years.

[14] Q: Please tell us what your current position [15] at Honeywell?

[16] A: Currently, my title is senior principal [17] engineer, and I work in the commercial auxiliary [18] power unit engineering project organizations. [19] It's kind of a big mouthful.

[20] Q: Mr. Zimmerer, would you would please move [21] the microphone just a little bit closer to you?

[22] A: Certainly. Is that better?

[23] Q: I think that is; thank you.

[24] What do you do as a senior principal

Page 464

[1] engineer in Honeywell's commercial APU division?

[2] A: Okay, we have primarily a project [3] management type of job. When we develop a new [4] APU, our function is to go out and we interface [5] with the airline, the aircraft manufacturers such [6] as Boeing or Airbus. We work with them to [7] understand what their technical requirements are, [8] what type of performance they need, what kind of [9] other operating conditions the APU will be [10] subjected to. We work with them, and we bring [11] that information back and we work with all our [12] internal experts to develop and to create the [13] design.

[14] We then work with our manufacturing [15] organization, we work with our outside suppliers [16] to fabricate the hardware to build the engines. [17] Then we perform a series of tests on the engines [18] to certify them with the FAA and other regulatory [19] authorities. Then ultimately we deliver the [20] product to Airbus or Boeing for their use.

[21] So it's overall a general [22] coordination of the technical task of engineering [23] the auxiliary power unit.

[24] Q: So we're clear, Mr. Zimmerer, are you

Page 465

[1] personally involved in designing any

of the [2] systems, for example, the surge control system, [3] for an APU?

[4] A: No, sir, I'm not.

[5] Q: Mr. Loranger this morning spoke a little [6] bit about the 331-350 APU, and I want to ask you [7] during your time at Honeywell, have you been [8] involved with the 331-350 APU?

[9] A: Yes, I have.

[10] Q: And is it correct that the 331-350 APU is [11] manufactured for A330 or A340 airplane?

[12] A: That's correct. Those are two aircraft [13] models that Airbus is currently building.

[14] Q: And the A stands for Airbus?

[15] A: That's correct, yes.

[16] Q: Tell us a little bit about the 331-350 [17] Honeywell APU, please, Mr. Zimmerer?

[18] A: 331-350 APU is a derivative engine of the [19] 331-200 APU, the Honeywell 331-200. It is [20] virtually identical to it except it's a little [21] larger in size and it produces a little more [22] power. And it's, the installation in the aircraft [23] is slightly different to adapt to the Airbus [24] airplane requirements.

Page 466

[1] Q: So it's similar to that 331-200 APU, but [2] a little bit larger in size?

[3] A: Little bit larger in size, little more [4] power is produced by the engine.

[5] Q: Does the 331-350 Honeywell APU have a [6] surge control system?

[7] A: Yes, it does.

[8] Q: Real briefly, sir, what is a surge [9] control system?

[10] A: Well, surge is a phenomena that can occur [11] in a compressor in a gas turbine engine, and when [12] it does, it can cause considerable damage to the [13] engine. And so a surge control system is utilized [14] to prevent damage, and in this particular case, to [15] the load compressor of the APU.

[16] Q: Do you understand that the patents at [17] issue in this case relate to a surge control [18] system?

[19] A: Yes, sir, I do.

[20] Q: And do you understand that the patents at [21] issue in this case cover the surge control system [22] in the Honeywell 331-350 APU?

[23] A: Yes, sir, I do.

[24] Q: I want to focus on your role, sir, when

Page 467

[1] you were involved in the what the Honeywell [2] 331-350 APU. And maybe the first thing to do is [3] to give us an idea of the timing, sir. When were [4] you

involved with that?

[5] A: It was about April of 1988 that I joined [6] the Honeywell 331-350 project team, and I assumed [7] the position in that team of the title was [8] assistant project engineer. And that was a [9] supervisory role where I had several employees [10] working for me and we had responsibility of a [11] certain portion of the engine.

[12] Q: What were your responsibilities?

[13] A: Our responsibilities were to coordinate [14] several of the main core components of the APU, in [15] particular, the load compressor, and also the gear [16] box would be manufactured by some suppliers in [17] Europe. And it was my job as well as my team's to [18] work with those suppliers to ensure that the [19] technical requirements were met on the products [20] and that they would integrate into the complete [21] APU package.

[22] Q: I want to focus with you today on the [23] load compressor part of your responsibilities. [24] What company did you interface with with respect

Page 468

[1] to the load compressor for the Honeywell 331-350 [2] APU?

[3] A: The company that we were contracted with [4] to work on the load compressor was a company [5] called Turbomeca. They are a French company, [6] they're located in the southern part of France.

[7] Q: And can you tell us a little bit more [8] about what you did in working with Turbomeca with [9] respect to the load compressor?

[10] A: Basic function was to provide Turbomeca [11] with the various requirements of the load [12] compressor. We had to tell them the types of [13] performance levels that were needed from the load [14] compressor, how it would interface with the APU, [15] and as the program progressed, we then worked with [16] Turbomeca to solve and address technical problems [17] as they arose. We coordinated their efforts so [18] that their products could be delivered and [19] assembled on their APU, then tested to satisfy the [20] regulatory requirements that we needed to meet.

[21] Q: And maybe we should pause at this moment, [22] Mr. Zimmerer, and can you tell us what a load [23] compressor is?

[24] A: A load compressor is one of the major

Page 469

[1] core components of the APU. Its main function is [2] to take air in, it compresses the air, raises the [3] pressure of the air, and then that air is [4] available to be

delivered to the airplane for [5] whatever use its system is needed for.

[6] Q: Are you familiar with the word IGV or [7] inlet guide vane?

[8] A: Yes, I am.

[9] Q: And is that part of the compressor?

[10] A: That is part of the load compressor, yes.

[11] Q: And please tell us what an inlet guide [12] vane is?

[13] A: An inlet guide vane, there is actually a [14] number of inlet guide vanes in a load compressor. [15] The inlet guide vanes are small air dynamic parts [16] that are located in the inlet of the compressor. [17] And their function is to control the amount of air [18] going through the load compressor so that when the [19] inlet guide vanes are closed, there is very little [20] air going through the load compressor. As they [21] are gradually opened, the amount of air going [22] through the compressor, the amount of air that is [23] available for the airplane, increases until they [24] reach a maximum position where you have the most

Page 470

[1] performance, the most bleed air, if you will, that [2] the engine can produce.

[3] Q: And sir, what about the phrase Delta P [4] over P. Have you heard that phrase?

[5] A: Yes, sir, I have.

[6] Q: And what is that?

[7] A: Let's see. Delta P over P is — let's [8] start with Delta, okay?

[9] Q: Okay, go ahead.

[10] A: Delta means difference, P means [11] pressure. So Delta P over P is referring to a [12] difference in pressures divided by a pressure, and [13] that parameter can be related to the amount of air [14] flowing through the compressor.

[15] Q: And again, one more term on a high level, [16] have you heard of the phrase noisy signals?

[17] A: Yes, I have.

[18] Q: And again, please tell us what that is.

[19] A: Well, for instance, if you're measuring [20] this parameter Delta P over P, in the ideal world, [21] you'd like to see a very steady and stable signal [22] without any change associated with it.

[23] In the real world, there is actually [24] some variation in that signal due to the air

Page 471

[1] dynamic characteristics that are occurring in the [2] load compressor. So that signal, instead of being [3] very steady actually has some fluctuation in it, [4] if

you will. And we refer to that fluctuation as [5] noise.

[6] Q: Is a surge control system part of [7] load compressor?

[8] A: No, it is not.

[9] Q: We've heard some testimony today about [10] the relationship between Honeywell and the surge [11] control system to the 331-350 APU, sir. Can [12] you tell us who developed the surge control system [13] for the 331-350 APU?

[14] A: Honeywell developed it using its surge [15] control system patents.

[16] Q: To get back to Turbomeca, Mr. Zimmerer, [17] in your dealings or Honeywell's dealings with [18] Turbomeca, did Honeywell have any mechanism in [19] place to protect its proprietary information?

[20] A: Yes, there was a nondisclosure agreement [21] in place.

[22] Q: And what is a nondisclosure agreement?

[23] A: It's an agreement that's entered into [24] with two parties, it's not unusual to use this

Page 472

[1] type of agreement in the aerospace industry where [2] two parties wish to exchange technical [3] information. If proprietary type information, [4] and the nondisclosure allows us to do that freely [5] and to protect that data. Both parties are only [6] allowed to use that data for a specific program or [7] a specific scope that is contained in the MDA, and [8] neither one of the parties are allowed to share [9] that information with an outside party, another [10] company, or even employees that are not associated [11] with that particular product. To do that, they [12] would have to get written permission from the [13] company that's supplying the information.

[14] Q: Tell us, Mr. Zimmerer, what your dealings [15] with Turbomeca were like?

[16] A: Well, it was a complicated project, and [17] we had a number of technical problems that were [18] challenges for us to solve. There were also some [19] challenges associated with dealing with a company [20] that was so far away, the time zones that were [21] eight hours different than we were, so it made it [22] difficult to deal with them. There were also [23] language issues, a number of their engineers did [24] not speak English well. So sometimes it made it

Page 473

[1] difficult to communicate, and the cultural aspects [2] of dealing with foreign suppliers were definitely [3] a personal challenge for myself and my team.

[4] Q: What did Honeywell and you do to

meet [5] those communication challenges?

A: Well, I had an employee working for me, [7] his name was Bernard Macarez. And his position [8] when he was in the 350, the Honeywell 350 APU [9] project, was to coordinate the load compressor [10] activity under my guidance. He was a French [11] citizen, he was born in France, and he spoke the [12] language very well. So he was actually located in [13] Phoenix with me for a period of time trying to [14] coordinate the technical effort with Turbomeca at [15] that time.

Q: And how did you and Mr. Macarez [17] communicate while he was in France and you were in [18] Phoenix?

A: Well, I think I ought to mention, first, [20] that although Mr. Macarez was originally stationed [21] in Phoenix, Arizona in I believe it was about [22] March or April of 1989, we transferred him over to [23] Turbomeca. He was located on-site at their [24] facility to act as our liaison, and his function

Page 474

[1] there was to basically to work with Turbomeca to [2] provide us with status of the effort. If we [3] needed to provide technical assistance or any [4] assistance to Turbomeca, Bernard was [5] there and he [5] could work with the French engineers, then supply [6] that information back to us.

Q: I might have gotten ahead of myself; I'm [8] sorry.

A: Could you repeat that question please?

Q: Yes. When Mr. Macarez was in France and [11] you were in Phoenix, now please tell us how did [12] you communicate?

A: The main method that we used for [14] communication, believe it or not, it was before [15] email had become real prevalent, so we had to rely [16] on the old fax machine. So Bernard routinely sent [17] in faxes providing us with the status of the [18] different problems or issues or what the upcoming [19] activities were.

MR. SCHULMAN: Your Honor, if I may [21] approach and give the witness a copy of what has [22] been marked Honeywell's Plaintiff Exhibit 892.

THE COURT: All right.

MR. SCHULMAN: This is in the

Page 475

theirs' notebooks so they can follow either [2] on the screen or in the book. In the white juror [3] notebook, it's I believe the last tab, it's 892, [4] it's a one-page document. So you're free to look [5] up here or in the book.

BY MR. SCHULMAN:

Q: Mr. Zimmerer, have you seen this document [8] before?

A: Yes, sir, I have.

Q: And what is it?

A: This is one of the faxes that Bernie [12] would use to communicate the technical status of [13] the program to those of us located back in [14] Phoenix.

Q: And to whom is this letter or this [16] facsimile addressed?

A: This particular fax is addressed to a [18] gentleman named Serge Barenfeld, who worked for [19] me, and also to myself.

Q: And you're the J. Zimmerer there?

A: That's correct, I'm the J. Zimmerer.

Q: What is the date of this document?

A: The date of the document is located there [24] to the right, and I should add that it's in a

Page 476

[1] European format where they locate the day first [2] followed by the month followed by the year. So [3] this is January 4, 1991.

Q: Now, this document has three different [5] numbered paragraphs. Could you real quickly tell [6] us what's going on in the first and second [7] paragraphs?

A: The first couple paragraphs Bernard is [9] providing us with the status of a couple of [10] different activities at Turbomeca that are in [11] progress.

Q: Let me draw your attention down to the [13] third paragraph. Let me read the first sentence.

"Please, could you mail to me ASAP the document [15] 31-7693 software requirement document for the [16] GTCP-335-350 ECB."

There's a lot of acronyms in there, [18] so could you walk us through that, Mr. Zimmerer?

A: Certainly. I guess one of those [20] probably don't have to explain is ASAP; I believe [21] most of us have heard that either from somebody [22] who works with us, or a boss or something; I'll lay [23] that one lay there.

As far as this particular document

Page 477

[1] goes, there's a number referred there, 31-7693, [2] that is a Honeywell report number. When we issue [3] reports that are going outside the organization, [4] we put a report number on them. So that would be [5] the document number that was assigned to this [6] particular document.

Q: And software requirement doc-

ument, what [8] is that?

A: That is the title of the document.

Q: And what kind of things would be in a [11] software requirement document?

A: Software requirements document is a [13] document that is has all the control logic for the [14] engine or for all the systems of the engine.

Q: And tell us what GTCP stands for, please?

A: GTCP is part of the official model [17] designations. It refers to — GT stands for gas [18] turbine, C stands for compressed air, since this [19] particular APU puts out compressed air, and P [20] refers to shaft power, because this particular APU [21] also provides shaft power for an electrical [22] generator.

Q: And finally, Mr. Zimmerer, ECB?

A: ECB is the acronym for electronic control

Page 478

[1] box, and that is the electronic device that [2] actually controls the operation of the engine.

Q: Can you now put all of these acronyms [4] together and tell us what this document is that [5] Mr. Macarez was referring to?

A: What he's referring to is that particular [7] document is a document that's very important to [8] the operation of the engine. It defines all our [9] control laws for the entire engine, the surge [10] control system, the fuel systems, how the engine [11] starts, how it interfaces with the airplane, and [12] so on.

Q: Is this type of a software requirement [14] document for the electronic control box, is this a [15] technical document or a marketing document?

A: This is a technical document.

Q: Let me go down to the first sentence in [18] the next paragraph; thank you, Dave.

"Two days ago I was surprised to see [20] this document on A. Mazel/H. Dupuy desk's (sic)." [21] First, what did you understand Mr. Macarez to mean [22] "this document"?

A: He's referring to the software [24] requirements documents in the paragraph above.

Page 479

Q: Who are A. Mazel and H. Dupuy?

A: The first gentleman is Alan Mazel, and [3] the second gentleman is Henry Dupuy, and they are [4] both Turbomeca employees that really were our [5] primary interfaces at Turbomeca. They had a [6] similar position we did in terms of coordinating [7] the overall project as

pect, if you will, of the [8] load compressor at Turbomeca.

[9] Q: Can you please read the next sentence to [10] the jury, Mr. Zimmerer, and tell us what [11] Mr. Macarez is saying there?

[12] A: "I don't recall having given to TM this [13] document which looks to me to be the heart of the [14] 350 electronic control."

[15] Q: What is TM?

[16] A: TM is an abbreviation for Turbomeca.

[17] Q: What did you understand Mr. Macarez to [18] mean when he said I don't recall having given [19] Turbomeca this a document which looks like the [20] heart of the 350 electronic control?

[21] A: First off, I think Bernard is telling us [22] he doesn't remember giving them this document, and [23] by stating this is the heart of the 350 control, [24] he's obviously concerned that there's a document

Page 480

[1] here that has a lot of proprietary information in [2] it, and he's concerned about that.

[3] Q: Did this document contain the surge [4] control logic for the 331-350 Honeywell APU?

[5] A: Yes, sir. I believe I mentioned that [6] earlier, that this document has all the control [7] logic in it for the entire APU including the surge [8] control system.

[9] Q: What was your reaction upon receiving [10] this fax from Bernie Macarez in which he says [11] Turbomeca has this document on someone's desk?

[12] A: Well, it raised a red flag with me.

[13] Q: Why is that?

[14] A: Well, I was concerned that, you know, [15] here is a proprietary document at Turbomeca which [16] we hadn't given them, and we didn't feel that they [17] needed to perform their duties as far as the [18] development of the load compressor.

[19] Q: What did you do in follow up after [20] receiving this fax from Mr. Macarez?

[21] A: I discussed it with a number of the [22] colleagues in my organization, people that I [23] worked with on the 350 program.

[24] Q: And what did you conclude to do?

Page 481

[1] A: Well, we considered the fact that we did [2] have a nondisclosure agreement in place, so the [3] document, the use of the document should be [4] protected.

[5] The other thing that we had to think [6] about, at this point in the program, we were [7] getting very close probably

within about five or [8] six months, of delivering our first product to [9] Airbus for their flight test program. So we were [10] very concerned about perhaps doing something that [11] might affect our ability to meet the commitments [12] to our customer.

[13] Q: Are you aware of any further inquiry at [14] Honeywell in 1999 as to why Turbomeca had this [15] document?

[16] A: No, I'm not.

[17] MR. ZIEGLER: Your Honor, I think [18] Mr. Schulman misspoke when he said 1999.

[19] MR. SCHULMAN: I appreciate that. [20] Thank you, Mr. Ziegler, I did misspeak.

[21] BY MR. SCHULMAN:

[22] Q: Is your answer the same — let me ask you [23] the question. Are you aware of any further [24] inquiry in 1991 as to why Turbomeca had this

Page 482

[1] document?

[2] A: No, sir, I'm not.

[3] Q: Let me ask you to look at the last [4] sentence in the second paragraph. "Before to go [5] further in the questioning, I would like to take a [6] look." What do you understand Mr. Macarez to be [7] saying there?

[8] A: I think Bernard is indicating that he [9] doesn't want to say anything to Turbomeca at this [10] point in time until he understands more thoroughly [11] what's in that document.

[12] Q: Did you ever send Mr. Macarez that [13] document, and by that document? I'm assuming [14] you're talking about the software requirement [15] document?

[16] A: No, sir, we did not.

[17] Q: And why not?

[18] A: It's a proprietary document, and we had [19] decided that we weren't going to raise the issue [20] with Turbomeca at this time. And there really was [21] no need for Bernard Macarez to have that document [22] in his possession in that area.

[23] Q: Now, I have just a couple more questions [24] for you, Mr. Zimmerer. This fax which says that

Page 483

[1] the heart of the Honeywell electronic control box [2] was on a Turbomeca desk was dated in 1991. In [3] 1991, did Turbomeca have any dealings with [4] Sundstrand?

[5] A: Yes, they did. As I recall, back in late [6] '89 or early '90, we became aware of a [7] partnership that was formed between Turbomeca and [8] Sundstrand to build

an APU that would compete with [9] some of the Honeywell products. And it created a [10] little bit of an unusual situation for us in that [11] it made Turbomeca both a supplier to us as well as [12] a competitor at the same time.

[13] Q: Now, you mentioned a joint venture [14] between Sundstrand and Turbomeca. What was the [15] name of this joint venture?

[16] A: It was called APIC, A-P-I-C, which I [17] believe stands for Auxiliary Power International, [18] and I'm not sure about the C.

[19] Q: We'll stick with APIC. We have enough [20] acronyms so we'll stick with APIC.

[21] Are Turbomeca and Sundstrand still [22] partners today? Does this joint venture still [23] exist today?

[24] A: To the best of my knowledge, it does not.

Page 484

[1] Q: Can you tell us a little bit more about [2] what happened to this joint venture?

[3] A: I understand that in about some time in [4] the mid '90s, Turbomeca decided that they wanted [5] to exit the APU business, and they transferred [6] their ownership to Sundstrand of the APIC [7] partnership.

[8] Q: What was the APU that Turbomeca and [9] Sundstrand were developing as part of this joint [10] venture called APIC?

[11] A: It was the APIC APS 3200.

[12] MR. SCHULMAN: No further questions [13] at this time, Your Honor.

[14] THE COURT: Mr. Ziegler, you may [15] cross-examine.

[16] MR. ZIEGLER: Just a few questions, [17] Your Honor.

[19] CROSS-EXAMINATION

[20] BY MR. ZIEGLER:

[21] Q: Good afternoon, Mr. Zimmerer. As I [22] understand your testimony, Mr. Zimmerer, there was [23] some concern back in '91 that somebody had given [24] these gentlemen at Turbomeca, Mr. Mazel and Dupuy,

Page 485

[1] this software information relating to a 331-350; [2] is that right?

[3] A: That's correct.

[4] Q: Is it Macarez or Macarez, how would you [5] pronounce it?

[6] A: Bernard pronounced it Macare which I [7] guess is his choice.

[8] Q: And Mr. Macarez in this fax that was [9] marked here indicated he hadn't given it to them, [10] and I take it you didn't give it to them either; [11] right?

In The Matter Of:

*Honeywell International, Inc. v.
Hamilton Sundstrand Corp.*

*Trial Volume Number 3
February 7, 2001*

*Hawkins Reporting Service
715 N. King Street
Wilmington, DE 19801
(302) 658-6697 FAX: (302) 658-8418*

*Original File 020701FC.V1, 312 Pages
Min-U-Script® File ID: 0568681796*

Word Index included with this Min-U-Script®

[19] A: Auxiliary power unit, then called the APS [20] 3000.

[21] Q: You said "then called the APS 3000". Did [22] that auxiliary power unit subsequently get a new [23] name?

[24] A: Yes.

Page 517

[1] Q: What was that name?

[2] A: The APS 3200.

[3] Q: For how long were you a project engineer [4] for the APS 3000 or 3200?

[5] A: Until, approximately, the third quarter [6] of 1994.

[7] Q: Let me hand to the court reporter a [8] document that I would like to have marked as [9] plaintiffs' trial exhibit number 61.

[10] For the record, it is a two-page [11] document with production numbers HSB 215489 and [12] 490.

[13] And let me ask the witness to take a [14] look at that document, please.

[15] MS. REZNIK: Let's move on to Page [16] 22.

[17] Q: Have you been the program manager for the [18] APS 3200 continuously since October 1995?

[19] A: Yes.

[20] Q: Am I correct that since October 1995 you [21] have been the individual with overall [22] responsibility at Sundstrand for the technical [23] aspects of the APS 3200?

[24] A: That's correct.

Page 518

[1] MS. REZNIK: Going back to [2] Plaintiffs' Trial Exhibit 61.

[3] Q: Let me ask the witness to take a look at [4] that document, please. Can you tell me what this [5] document is, sir?

[6] A: It's a coordination memo.

[7] Q: And do you see in the middle of the [8] bottom, sir, someone has written in handwriting [9] Assigned Suttie?

[10] A: I do see that.

[11] Q: Is it fair to say that the Suttie who was [12] assigned on this coordination memo was yourself?

[13] A: Yes.

[14] Q: Do you see references to the delta P/P [15] noise issue?

[16] A: I do.

[17] Q: Can you tell me what the delta P/P noise [18] issue was?

[19] A: Yes, I can.

[20] Q: Okay. Please do so.

[21] A: The control system for the APS 3200 [22] measures two static pressures, or there are two [23] static ports. And we measure a delta static [24] pressure and an

absolute static pressure. At this

Page 519

[1] stage in the program, we had sensors which were [2] measuring very noisy signals.

[3] And by noisy, I mean the basic [4] signal existed, but there was significant [5] fluctuations on the signal. That is a problem in [6] control system development, and we were trying to [7] eliminate the noise.

[8] Q: Am I right that the delta P/P that [9] Sundstrand measures in the 3200 is a way of [10] quantifying the air flow that is going out of the [11] load compressor?

[12] A: Yes.

[13] Q: Did you ever have a solution to the delta [14] P/P noise issue?

[15] MS. REZNIK: I'm sorry, Your [16] Honor.

[17] THE COURT: If you could tell me the [18] line and page number.

[19] MS. REZNIK: Seventy-three, 14 [20] through 18.

[21] The question was: Did you ever have [22] a solution to the delta P/P noise issue.

[23] ANSWER: If I were to answer the [24] delta P/P signal is still noisy, but as I

Page 520

[1] mentioned, we worked to make our system work [2] successfully.

[3] Q: Do you see in item number two on the [4] first page of Plaintiffs' Exhibit 61 on the first [5] line there is a reference to three, and it's in [6] capital letters, GTCP-350 modules.

[7] Do you see that?

[8] A: Yes, I do.

[9] Q: What is a GTCP-350?

[10] A: Its an Allied Signal APU.

[11] Q: Do you see on the fourth line of item [12] number two on the first page of Plaintiffs' [13] Exhibit 61 it says, "GAPD uses, "and then the rest [14] of the sentence.

[15] Do you see that, sir?

[16] A: Yes, I do.

[17] Q: Is GAPD a reference to Allied Signal?

[18] A: GAPD, as I understand it, refers to [19] the G is Garrett. I don't know what the A and the [20] PD stand for.

[21] Q: But is it your understanding that Garrett [22] is in some way a unit of Allied Signal?

[23] A: Yes.

[24] Q: In the APU business do you sometimes

Page 521

[1] refer to Garrett as a part of Allied

Signal or [2] Honeywell that makes APUs?

[3] A: Yes.

[4] Q: If you turn to the top of the second page [5] of Plaintiffs' Exhibit 61, do you see that it is [6] headed delta P/P noise solving plan?

[7] A: Yes.

[8] Q: And do you see at the very top there [9] seems to be a series of tests prescribed for the [10] GTCP 331 350 L/C module?

[11] A: Yes.

[12] Q: First of all, what does the capital L/C [13] signify?

[14] A: Load compressor.

[15] Q: Does this memo, Plaintiffs' Exhibit 61 [16] show APIC using Turbomeca's knowledge of the [17] Allied Signal GTCP-350 APU and load compressor in [18] the course of designing the 3000/3200 APU?

[19] A: No.

[20] Q: Mr. Suttie, let me ask you to take a look [21] at what the court reporter has marked as [22] Plaintiffs' Exhibit Number 62, which is a two-page [23] coordination memo, with production numbers HSA [24] 190251 and 252, and which appears to be a memo

Page 522

[1] written by you four days after Plaintiffs' Exhibit [2] 61 that we were just looking at.

[3] Can you tell me what this memo is, [4] please?

[5] A: It's a response to the coordination memo [6] you already showed.

[7] Q: In other words, Plaintiffs' Exhibit 62 is [8] your response to your receipt of Exhibit 61; [9] correct?

[10] A: Yes.

[11] Q: All right. Do you see number two at the [12] bottom of the page, you discuss the Allied Signal [13] GTCP-350 load compressor?

[14] A: Yes.

[15] Q: What do you mean by the first sentence [16] which says, "I am very surprised that GAPD, [17] meaning Allied Signal, uses a sensor Q-5 Psid?

[18] A: What did I mean?

[19] Q: Yes, sir.

[20] A: I was surprised.

[21] Q: And am I correct that the reason that you [22] were surprised here on Plaintiffs' Exhibit 62 is [23] because the pressure differential that Honeywell [24] was measuring was comparable to the pressure

Page 523

[1] differential that Sundstrand was measuring?

[2] A: No.
[3] Q: Why not?
[4] A: Because it's not comparable.
[5] Q: First of all, Plaintiffs' Exhibit 62 is a
[6] memo that you wrote in October
1992; correct?
[7] A: Yes.
[8] Q: And in part, the memo discusses
data [9] regarding the operation of the
Honeywell APU load [10] compressor;
correct?
[11] A: The APU designed by Turbomeca,
sorry, [12] the load compressor for that
APU designed by [13] Turbomeca.
[14] Q: Yes, sir. And that's the GTCP-350;
[15] correct?
[16] A: Yes.
[17] Q: And that's an APU that's currently
sold [18] by Allied Signal, correct?
[19] A: As I understand, yes.
[20] Q: Let me ask you to turn back, sir, to
[21] Plaintiffs' Exhibit 61 and 62, and
looking at [22] Plaintiffs' Exhibit 61, do
you see that that's [23] authored by a Mr.
G. Hardy?
[24] A: Correct.

Page 524

[1] Q: Who is that, or who was that in
October [2] of 1992?
[3] A: Gerard Hardy.
[4] Q: And was he a Sundstrand or a
Turbomeca [5] employee?
[6] A: Turbomeca.
[7] Q: Well, in October 1992, what was [8]
Mr. Hardy's position or job at Tur-
bomeca?
[9] A: He was the program manager.
[10] Q: For the APS 3200?
[11] A: Correct.
[12] Q: And when you say in Plaintiffs'
Exhibit [13] 62, I am surprised that Allied
Signal uses a [14] sensor with zero to five
pounds per square inch [15] differential, I
take it you knew that fact, you [16] knew
what it was that Allied Signal sensor
sensed [17] by virtue of the statement that
Mr. Hardy had made [18] to you in
Plaintiffs' Exhibit 61; is that correct?
[19] A: The answer is yes.
[20] Q: Okay. Now, do you see on Plain-
tiffs' [21] Exhibit 62 to the fourth line
under two says Data [22] from B. Macarez
indicates that the GAPD sensor [23] used
to be 0-20 Psid?
[24] A: Yes, I see that.

Page 525

[1] Q: Who was B Macarez in October,
1992?
[2] A: Bernie Macarez was the Tur-
bomeca [3] coordination engineer.

[4] Q: And what were his duties and [5]
responsibilities as a coordination en-
gineer?
[6] A: He resided in San Diego, and he —
his [7] function was to improve com-
munication between [8] Sundstrand and
Turbomeca.
[9] Q: Okay. And as I understand it, you
were [10] asking Mr. Hardy whether Allied
Signal had in its [11] APU returned to its
earlier measure method of [12] measuring
air flow; is that correct?
[13] A: Correct.
[14] Q: Why were you asking that to Mr.
Hardy?
[15] A: It was a response to his coor-
dination [16] memo to me.
[17] Q: Plaintiffs' Exhibit 61?
[18] A: Exhibit 61.
[19] Q: Why do you think Mr. Hardy might
know the [20] answer to that question?
[21] A: Because of the information he
supplied to [22] me in his coordination
memo to me.
[23] Q: Referring, again, to Plaintiffs' Ex-
hibit [24] 61?

Page 526

[1] A: Yes.
[2] Q: Mr. Suttie, I've handed you what
the [3] court reporter has marked as
Plaintiffs' Exhibit [4] Number 64, which is
a one-page coordination memo [5] with
production number HSB 2154488.
[6] Do you have that document in front [7]
of you?
[8] A: HSB 215488?
[9] Q: Yes, sir.
[10] A: Yes, I do.
[11] Q: And do you see that this is dated
the day [12] after Plaintiffs' Exhibit 64, it's
dated [13] October 27th, 1992?
[14] A: Yes, I do.
[15] Q: And who is this from?
[16] A: Dominic Tuquoi.
[17] Q: And what was Mr. Tuquoi's posi-
tion in [18] October 1992?
[19] A: He was a project engineer.
[20] Q: And was he a Turbomeca employ-
ee who was [21] assigned to the APS 3200
project?
[22] A: Yes.
[23] Q: Do you see on the second line of
the [24] coordination memo here there is
a reference to the

Page 527

[1] Garrett modules and Q23?
[2] A: Yes.
[3] Q: What is Q23?
[4] A: It was one of our qualification
APUs.

[5] Q: What do you mean by qualification
APU?
[6] A: An engine built prior to the pro-
duction [7] with the purpose of qual-
ifying the design.
[8] Q: In this case, it was attempting to [9]
qualify the design for what became the
APS 3200; [10] correct?
[11] A: Yes.
[12] Q: And am I correct that this memo
shows [13] that Turbomeca was testing
together both your Q23 [14] qualification
APU and some Garrett APUs that it [15]
had in its possession?
[16] A: That's my understanding of the
words.
[17] Q: Mr. Suttie, I've handed you what
the [18] court reporter has marked as
Plaintiffs' Exhibit [19] Number 65, which
is a document with production [20]
numbers HSA 161463 through 161476.
[21] Let me ask you to take a look at [22]
that document and tell me if you can tell
me what [23] it is?
[24] A: It's a memo from Bob Fleming to
me.

Page 528

[1] Q: Now, who was Bob Fleming in
November [2] 1992?
[3] A: He was the Sundstrand engineer
resident [4] at Turbomeca.
[5] Q: Am I correct that you circulate —
and [6] this is the fax that Bob Fleming
sent to you, [7] correct?
[8] A: It appears to be.
[9] Q: And am I correct that you then
circulated [10] this document to a num-
ber of people inside [11] Sundstrand in
San Diego?
[12] A: Yes.
[13] Q: And that's the list of the four
people in [14] the column on the left
bottom middle of the page; [15] is that
right?
[16] A: Yes.
[17] Q: Was Peg your secretary in Novem-
ber 1992?
[18] A: Yes.
[19] Q: And so am I correct that this note
was [20] both a note to your secretary to
send copies to [21] the individuals you
listed, and then a note that [22] you
wanted to convey to those individuals;
[23] correct?
[24] A: Yes.

Page 529

[1] Q: And am I correct that these four [2]
individuals you were sending it to were
all people [3] who were working at the
time on developing the [4] control sys-
tems for the APS 3200)?
[5] A: Yes.

[6] Q: Am I correct that the document that is [7] attached to the cover page is a document that [8] describes the operation of Allied Signal's GTCP [9] 351-350 APU?

[10] A: I can't answer that without re-reading every [11] page.

[12] Q: Well, when you received the document from [13] Mr. Fleming, then passed it on to your colleagues, [14] what did you understand the document to be?

[15] A: I don't recall what I thought the [16] document to be back then.

[17] Q: Take as much time as you need to and tell [18] me now what the document is.

[19] A: Some of the pages have reference to GTCP [20] APUs.

[21] Q: And is it your understanding that the [22] pages that don't explicitly mention the Allied [23] Signal APU by name are nonetheless talking about [24] the operation of Allied Signal's APUs?

Page 530

[1] A: That's a reasonable assumption.

[2] Q: Where did Mr. Fleming get this document [3] from?

[4] A: I do not know.

[5] Q: What did you say— what did you mean by [6] this cover note that said you liked the plot on [7] the second-to-last page of the document [8] Mr. Fleming sent to you?

[9] A: I thought it was a good representation of [10] the data.

[11] Q: In what sense?

[12] A: It was a clear portrayal of information.

[13] Q: Mr. Suttie, I've handed you what he [14] court reporter has marked as 'Plaintiffs' Exhibit [15] Number 67, which is a three-page document with [16] production numbers HSB 215504 through 06.

[17] Do you have that document in front [18] of you?

[19] A: Yes.

[20] Q: And is that your handwriting near the [21] bottom of the page— first page of Suttie Exhibit [22] 13?

[23] A: Can you be more specific?

[24] Q: Do you see the word Pete?

Page 531

[1] A: Yes.

[2] Q: Is that your name and your handwriting?

[3] A: Yes.

[4] Q: And does that show that you distributed [5] this memo to a number of members of the team who [6] were working with you on developing the APS

3200 [7] in June 1992?

[8] A: Yes.

[9] Q: And this is a coordination memo, the [10] original document here is a coordination memo [11] written by Mr. Tuquoi; is that right?

[12] A: Yes.

[13] Q: Can you look at it and tell me what the [14] memo relates to?

[15] A: The memo covers delta P measurement.

[16] Q: Do you see here in the part written by [17] Mr. Tuquoi, he says, "We don't see any reason to [18] have a different signal on the qual APS 3000." Do [19] you see that?

[20] A: Yes. I see it.

[21] Q: Do you understand qual to be an [22] abbreviation for something, then?

[23] A: Yes, I do.

[24] Q: What's that?

Page 532

[1] A: Qualification.

[2] Q: What's the signal that's being talked [3] about in that sentence?

[4] A: I don't know.

[5] Q: It's the signal for measuring delta P, [6] isn't it?

[7] A: One could assume that.

[8] Q: Am I correct that Mr. Tuquoi's conclusion [9] here is that you should use for the APS 3000 the [10] same delta P measurement signal that is used on [11] the Allied Signal 331-350?

[12] A: I don't know what Mr. Tuquoi's conclusion [13] was.

[14] Q: Well, taking a look at the memo, isn't [15] that what you understand by the memo here?

[16] A: One could assume that.

[17] Q: Mr. Suttie, I hand you Plaintiffs' [18] Exhibit 69, which is a one-page coordination memo [19] dated October 8th, 1992, with production number [20] HSB 215491.

[21] Do you have that document in front [22] of you, sir?

[23] A: Yes.

[24] Q: And do you see that there is a cc to

Page 533

[1] yourself handwritten in the bottom of this [2] document?

[3] A: Yes.

[4] Q: And do you see that Mr. Tuquoi, do you [5] see that this memo is also talking about [6] addressing that delta P/P issue that you were [7] having in the 3200?

[8] A: Yes.

[9] Q: Mr. Suttie, the court reporter has handed [10] you what's been marked as

Plaintiffs' Exhibit [11] Number 70, which is a one-page coordination memo [12] dated February 2nd, 1993 with production number [13] HSB 215454.

[14] Do you have that document in front [15] of you?

[16] A: 215454?

[17] Q: Yes, sir.

[18] A: Correct.

[19] Q: And do you see in the bottom middle of [20] this document, this handwritten assigned Suttie?

[21] A: Yes.

[22] Q: Can you tell me what this document is [23] talking about, sir?

[24] A: Would you like me to read it now and

Page 534

[1] understand it?

[2] Q: Sure.

[3] A: It's talking about the control of the [4] load compressor.

[5] Q: I see a phrase that appears a couple [6] times that says transient band. Do you see that?

[7] A: Yes.

[8] Q: What does a transient band mean?

[9] A: It's the margin afforded in the control [10] system to allow for a transient operation of the [11] load compressor.

[12] Q: So is it fair to say the larger the [13] transient band is, the larger your margin of error [14] is before you get to surge?

[15] A: Yes.

[16] Q: Do you see, I think it's six lines down [17] from the top of this memo, there is a sentence [18] that starts near the right-hand margin with the [19] words "so the loss of "?

[20] A: Yes, I see that.

[21] Q: Can you read into the record the memo [22] starting with those words through the end of the [23] page, please?

[24] A: "So the loss of surge margin due to

Page 535

[1] transient band would be 20 percent. For a [2] comparison, on the GTCP 331-350, the transient [3] band loss given by Garrett is only five percent on [4] surge margin. Around delta P/P, approximately, [5] point two, this loss corresponds to a six percent [6] transient band on delta P/P, which is the target [7] value because MES conditions."

[8] Q: What are MES conditions?

[9] A: Main engine start.

[10] Q: Am I right that in the APS 3200, you need [11] to bring in at least a certain level of air flow [12] through the load compressor in order to prevent [13] surge?

[14] A: Yes.

[15] Q: And how is it that you determined how [16] much air you need to bring in through the load [17] compressor to prevent surge?

[18] A: We have the relationship between delta P [19] static, divided by P static, which corresponds to [20] air flow.

[21] Q: And the delta P/P relationship, that's [22] something that you figured out in the course of [23] designing the 3200 bleed control valve system, [24] correct?

Page 536

[1] A: No.

[2] Q: When did you determine that?

[3] A: It was provided by Turbomeca.

[4] Q: When did Turbomeca provide that?

[5] A: I don't recall.

[6] Q: Was it before you started working on the [7] APS 3000, which became the 3200?

[8] A: No, it was not.

[9] Q: We were looking at some memos from [10] October 1992. Was it before October 1992?

[11] A: I don't recall.

[12] Q: Where did they get that relationship [13] from?

[14] A: I don't know.

[15] Q: Did they get it from their experience on [16] the Allied Signal 331-350 APU?

[17] A: I don't know.

[18] Q: From the time that you were designing and [19] developing the APS 3200, was there ever any [20] consideration about whether that design might [21] infringe someone else's patent rights?

[22] A: Not that I recall.

[23] Q: To your knowledge, was there any effort [24] undertaken by Sundstrand to determine whether

Page 537

[1] there might be patents on aspects of APU [2] technology that would be implicated by the APS [3] 3200?

[4] A: I don't know.

[5] Q: Are you aware of any such efforts?

[6] A: No.

[7] Q: Did you ever direct anyone to undertake a [8] search as to whether there might be patent rights [9] of others that might be implicated by the APS [10] 3200?

[11] A: No.

[12] Q: What period of time did you say the [13] development of the APS 3200 took place during?

[14] A: Late '89 through late '93.

[15] Q: During the period from late 1989 through [16] late 1993, I take it you were aware that Allied [17] Signal also manufactured and sold APUs similar in [18] size and output to the APS 3200, correct?

[19] A: Yes.

[20] Q: Can you describe for me the role of [21] Turbomeca with regard to the design and [22] development of the APS 3200?

[23] A: We had a 50/50 joint venture. Sundstrand [24] had a joint venture with Turbomeca.

Page 538

[1] Turbomeca was responsible for [2] designing the second-stage turbine disk and [3] nozzle, first-stage disk and nozzle. Turbomeca [4] was responsible for the power section compressor [5] and was responsible for the shaft that connected [6] those three parts and also the load compressor.

[7] They were responsible for the plenum [8] and they were responsible for the load compressor [9] control and the bearings on which that rotor ran.

[10] Q: In dividing the responsibility between [11] the companies and the joint venture, is it fair to [12] say that Sundstrand had the responsibility for [13] designing and developing the control logic for the [14] APS 3200?

[15] A: Yes.

[16] Q: Did Turbomeca have any role in the design [17] and development of the control logic of the APS [18] 3200?

[19] A: Yes. They had a role.

[20] Q: What was Turbomeca's role?

[21] A: To define where appropriate how they [22] wanted to control system — how they wanted the [23] control system to control the APU.

[24] They had input on EGT set points.

Page 539

[1] They told us what the speed of the machine would [2] be. The control system has interaction with many [3] parts of the APU. We wrote an ICD, as I [4] mentioned, to ensure that — ICD stands for [5] interface control document — to ensure that we [6] have clear delineation and definition of the [7] requirements for the control system.

[8] So many of the required perimeters [9] for control systems were defined by Turbomeca, the [10] exhaust temperature, the limits duration cooldown [11] period.

[12] Control system is, by definition a [13] joint venture. We implemented a control. We [14] wrote the control laws. We wrote the system [15] specifications. We wrote the software. We did [16] the

testing, but Turbomeca had a role in defining [17] how their product — their part of the APU should [18] be controlled.

[19] Q: I'm handing you what's previously been [20] marked as Plaintiffs' Exhibit 61, which is a [21] coordination memo from Mr. Hardy at Turbomeca [22] dated October 22nd, 1992. Correct?

[23] A: Yes.

[24] Q: You have this in front of you, right?

Page 540

[1] A: Yes.

[2] Q: What's the subject of this coordination [3] memo?

[4] A: Delta P/P noise.

[5] Q: And it indicates that Turbomeca was [6] providing information to Sundstrand regarding a [7] current plan for solving the delta P/P noise [8] issue; is that correct?

[9] A: Yes.

[10] Q: So it's fair to say that one role [11] Turbomeca played in the development of the APS [12] 3200 was helping to solve this delta P/P noise [13] issue; is that correct?

[14] A: Yes.

[15] Q: If you turn to the next page, HSB [16] 215490.

[17] MR. KRUPKA: Excuse me a minute.

[18] MS. REZNIK: Yes.

[19] (Following a discussion held off the [20] record.)

[21] MS. REZNIK: I'm going back to [22] 1952, Judge.

[23] Q: So it's fair to say that one role [24] Turbomeca played in the development of APS 3200

Page 541

[1] was helping to solve this delta P/P noise issue; [2] is that correct?

[3] A: Yes.

[4] Q: If you turn to the next page, HSB 215490, [5] it describes a delta P/P noise-solving plan [6] developed by Turbomeca; correct?

[7] A: Yes.

[8] Q: To the left of that, it says GTCP-331-350 [9] L/C module; correct?

[10] A: Yes.

[11] Q: And you understand that GTCP-331-350 is [12] an APU developed by Garrett, now Honeywell; is [13] that correct?

[14] Actually, let me rephrase the [15] question. You understand that GTCP-331-350 L/C is [16] a APU developed by Garrett, now Honeywell; is that [17] correct?

[18] A: Yes.

[19] Q: So as part of Turbomeca delta P/P